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SAPC-23046

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JAN 8 1968

MEMORANDUM FOR: Project Director, Attention:

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SUBJECT : System IV AGC Circuits and Associated Ground Read-Out Equipment

1. As now constructed, System IV contains automatic gain control (AGC) circuits which distort the amplitude of recorded signals. A separate tape data channel (track 13) carries amplitude modulated tones which when applied to the recorded signal through the M and N Racks remove this distortion.

2. Ramo-Wooldridge has suggested that the present AGC data channel presentation should be changed from amplitude to frequency modulation in order to preserve AGC information through successive tape dupings. Their proposal to this effect involves design changes both in System IV and the ground readout equipment and will cost in excess of 25X1

3. This Staff has investigated the operation of the amplitude modulated AGC data system. Tests have shown that important time saving data can be realized from the present system and that ELINT analysis made from the original or even the first 14 channel dupe will be satisfactory. However, the present M and N Rack equipments will need minor modifications to make best use of the AGC information recorded by System IV.

4. It is recommended that:

a. The present amplitude modulated AGC data system be preserved and the R-W proposal for a change to frequency modulation be rejected;

b. The N Rack be modified so as to make available simultaneously to the analyst an either normal (3.75 ips) or duping speed (15 ips) the direct current analogue voltages obtained from the amplitude modulated AGC tones of all eight superhetro-dynes receivers in System IV. These voltages should be suitable for presentation on a direct recording oscillograph such as the Brush. This modification should be neither costly nor time consuming.

*Don - Let together with Duke & relay this info to R.W.
Request action on 4 to be prepared*

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c. With the addition of the above modification, production proceed on the M and N Rack read-out equipments as presently designed.

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Acting ELINT Staff Officer

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